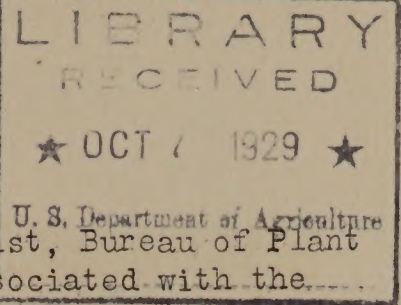


Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

1.9
269Ra

AIR-COOLED APPLE STORAGE HOUSES



A radio talk by J. R. Magness, principal horticulturist, Bureau of Plant Industry, delivered through WRC and 31 other stations associated with the National Broadcasting Company, Friday, September 27, 1929, Eastern Standard Time.

The next 30 days will see most of the apple crop of the United States picked and placed in storage. At least half of the commercial crop will go into cold storage, where the temperature can be held down to around 32 degrees, the ideal for long time holding of the fruit.

Another large portion of our year's apple supplies will be held in air-cooled storages on the farms. While less satisfactory than cold storage, since temperatures during the fall and early winter are high, such storage is also cheaper, and allows the fruit to remain on the farm. This is especially desirable when the fruit can be sold at the farm or at nearby markets.

The varieties of apples which are suitable for handling in air-cooled storage will vary in different parts of the country. In the northern states varieties such as Jonathan, Delicious, Baldwin, Northern Spy, Stark do not ripen until late in the season, when frosts are normally occurring and the weather is cool. The apples are also firmer at harvest time than are the same varieties grown farther south. Such varieties are very satisfactory for holding in air-cooled storage in the northern states, including Michigan, New York and New England. Varieties such as McIntosh, Wealthy, and others which ripen somewhat earlier in the northern states while the weather is warm ripen very rapidly when placed in common storage and are not suitable for holding in these districts.

In the states of the middle latitudes varieties such as those mentioned for satisfactory holding in the northern states ripen earlier while the temperatures are still high. Jonathan, Delicious, and Grimes are fall varieties in such districts as the Shenandoah Valley and most of Ohio and Indiana. These varieties which ripen while the weather is still warm generally are not satisfactory for long holding in air-cooled storage. On the other hand, quite satisfactory results can be obtained in these districts from holding such varieties as Winesap, York Imperial, Stayman Winesap, Rome Beauty and Black Twig, which ripen sufficiently late so that the storages are fairly cool by the time the fruit is harvested.

In this connection it is interesting to note that, in general, the later any variety is harvested, so long as it does not show water core and dropping from the trees, the more satisfactory it will be for air-cooled storage holding. Apples ripen and soften more rapidly in good air-cooled storage than they do on the trees. In numerous tests conducted in the Department of Agriculture the late picked fruit has almost invariably been firmer at Christmas time, for example, after

holding in air-cooled storage than has earlier picked fruit from the same trees and held in the same storage. Picking should not be delayed so long that the fruit will become water cored or that heavy loss will result from dropping. In general, the later fruit is picked, so long as these conditions have not developed, the better it will hold in air-cooled storage. This is not true of cold storage where the temperatures can be controlled artificially.

Fruit can be handled in air-cooled storage in barrels, in baskets, in boxes or in crates. The fruit will cool very rapidly and generally will hold somewhat better in crates than in the tighter packages. Crates make a very suitable package to use when fruit is retailed direct from the storage or sold from a local market.

Since cool air tends to settle, the fruit stacked on the floor in air-cooled houses is usually somewhat cooler and ripens somewhat more slowly than fruit in the top of the house. It is desirable to allow considerable space above the fruit to prevent the fruit at the top becoming over ripe while that on the floor is in good condition. If the storage house is not completely filled all of the floor space should be occupied with stacks, rather than using only part of the storage area and stacking to the ceiling.

The rate of ripening of the fruit in air-cooled storage houses will depend almost entirely on the temperature which is maintained. To keep the fruit as cool as possible, all openings and ventilators should stand open whenever the outside temperature is below that in the house. When the outside temperature is above that of the storage these openings should be tightly closed.

Finally, it should be remembered that fruit in air-cooled storage, even under the most favorable conditions, will hold as long as fruit in cold storage before becoming mealy and over ripe. If the fruit is to be shipped away from the storage to market it should be moved out while still firm, since otherwise it will be mealy and dry and of inferior quality when it reaches the consumer. The U. S. Department of Agriculture will be glad to forward more detailed information on the construction of air-cooled storages and the handling of fruit for storage to anyone who may be interested further in this subject.
